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SEARCH REQUEST FORM

Requester's Full Name: MARK BERCH Examiner #: 59193 Date: 6/23/06

Art Unit: 1624 Phone Number: 2-0663 Serial Number: 10532753 CD

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****

To ensure an efficient and quality search, please attach a copy of the cover sheet, claims, and abstract or fill out the following:

Title of Invention: _____

Inventors (please provide full names): _____

_____

Earliest Priority Date: _____

Search Topic:
Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc., if known.

For Sequence Searches Only *Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

All Bibs on ~~amorphous~~ amorphous cofd, Nin

(L12)

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STAFF USE ONLY

Searcher: _____

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Date Searcher Picked Up: _____

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Type of Search

_____ NA Sequence (#)

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_____ Structure (#)

_____ Bibliographic

_____ Litigation

_____ Fulltext

_____ Other

Vendors and cost where applicable

_____ STN _____ Dialog

_____ Questel/Orbit _____ Lexis/Nexis

_____ Westlaw _____ WWW/Internet

____ In-house sequence systems

__ Commercial ___ Oligomer ____ Score/Length

__ Interference ___ SPDI ____ Encode/Transl

_____ Other (specify)

Instant Application

L3 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:453223 HCAPLUS
DOCUMENT NUMBER: 141:6966
ENTRY DATE: Entered STN: 04 Jun 2004
TITLE: Process for preparing cefdinir and its amorphous hydrate
INVENTOR(S): Deshpande, Pandurang Balwant; Khadangale, Bhausaheb Pandharinath; Ramasubbu, Chandrasekaran
PATENT ASSIGNEE(S): Orchid Chemicals & Pharmaceuticals Ltd., India
SOURCE: PCT Int. Appl., 26 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
INT. PATENT CLASSIF.:
MAIN: C07D501-06
SECONDARY: C07D501-22
CLASSIFICATION: 26-5 (Biomolecules and Their Synthetic Analogs)
Section cross-reference(s): 10, 63
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004046154	A1	20040603	WO 2003-IB5032	20031110
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003276525	A1	20040615	AU 2003-276525	20031110
US 2006094703	A1	20060504	US 2005-532753	20050513 <--

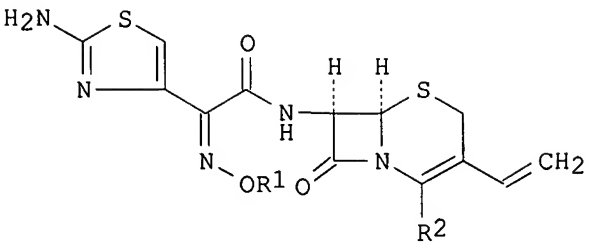
PRIORITY APPLN. INFO.:

IN 2002-MA848	A	20021115
IN 2003-MA152	A	20030226
WO 2003-IB5032	W	20031110

PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2004046154	ICM	C07D501-06
	ICS	C07D501-22
	IPCI	C07D0501-06 [ICM,7]; C07D0501-22 [ICS,7]; C07D0501-00 [ICS,7,C*]
	IPCR	C07D0501-00 [I,A]; C07D0501-00 [I,C*]
	ECLA	C07D501/00
AU 2003276525	IPCI	C07D0501-06 [ICM,7]; C07D0501-22 [ICS,7]; C07D0501-00 [ICS,7,C*]
	IPCR	C07D0501-00 [I,A]; C07D0501-00 [I,C*]
US 2006094703	IPCI	A61K0031-545 [I,A]; C07D0501-14 [I,A]; C07D0501-00 [I,C*]
	NCL	514/202.000; 540/222.000
	ECLA	C07D501/00

OTHER SOURCE(S): CASREACT 141:6966; MARPAT 141:6966
GRAPHIC IMAGE:



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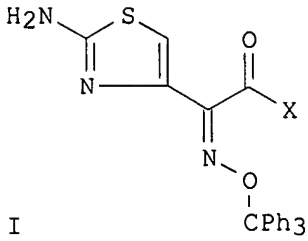


III

ABSTRACT:
The present invention discloses a process for preparing cefdinir [I; R1 = H; R2 = CO2H (II)] and its monohydrate via condensing 7-amino-3-cephem-4-carboxylic acid with III (X = ester, thioester, halo, etc.) in the presence of a tertiary amine and an organic solvent, followed by treatment with a base to produce I [R1 = C(Ph)3; R2 = carboxylate ion (IV)], and hydrolyzing IV, using an acid in the presence of a solvent, to produce II. Thus, reaction between III (X = OH) and 2-mercapto-5-phenyl-1,3,4-oxadiazole yielded 2-mercapto-5-phenyl-1,3,4-oxadiazolyl-(Z)-(2-aminothiazol-4-yl)-2-(trityloxyimino) acetate, which, on condensation with 7-amino-3-vinyl-3-cephem-4-carboxylic acid and subsequent hydrolysis, afforded II.

SUPPL. TERM: cefdinir hydrate prepn cephalosporin antibiotic

INDEX TERM: Hydrolysis
(acid; during preparation of cefdinir and its amorphous hydrate)

INDEX TERM: Sulfonic acids, reactions
ROLE: RGT (Reagent); RACT (Reactant or reagent)
(aromatic/aliphatic; during preparation of cefdinir and its amorphous hydrate)

INDEX TERM: Condensation reaction
(between 2-mercapto-5-phenyl-1,3,4-oxadiazolyl-(Z)-(2-aminothiazol-4-yl)-2-(trityloxyimino)acetate, and 7-amino-3-vinyl-3-cephem-4-carboxylic acid in preparation of cefdinir and its amorphous hydrate)

INDEX TERM: Asymmetric synthesis and induction
(of cefdinir and its amorphous hydrate)

INDEX TERM: Solvents
(organic; during preparation of cefdinir and its amorphous hydrate)

INDEX TERM: X-ray diffraction
(pattern of the powder of cefdinir monohydrate)

INDEX TERM: Antibiotics
(β-lactam; preparation of cefdinir and its amorphous hydrate)

INDEX TERM: **64-18-6**, Formic acid, reactions **64-19-7**, Acetic acid, reactions **7647-01-0**, Hydrochloric acid, reactions **7664-93-9**, Sulfuric acid, reactions
ROLE: RGT (Reagent); RACT (Reactant or reagent)
(for acid hydrolysis during preparation of cefdinir and its amorphous hydrate)

INDEX TERM: **91832-40-5P 696592-14-0P 696592-17-3P**

ROLE: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of cefdinir and its amorphous hydrate)

INDEX TERM: **213978-34-8P**
ROLE: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(preparation of cefdinir and its amorphous hydrate)

INDEX TERM: **1310-58-3**, Potassium hydroxide, reactions **3004-42-0 79349-82-9 128438-01-7 696592-20-8**
ROLE: RCT (Reactant); RACT (Reactant or reagent)
(preparation of cefdinir and its amorphous hydrate)

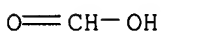
INDEX TERM: **75-50-3**, Trimethylamine, reactions **121-44-8**, Triethylamine, reactions **626-67-5**, N-Methylpiperidine **7087-68-5**, N,N-Diisopropylethylamine **68641-49-6**
ROLE: RGT (Reagent); RACT (Reactant or reagent)
(preparation of cefdinir and its amorphous hydrate)

INDEX TERM: **64-17-5**, Ethanol, uses **67-56-1**, Methanol, uses **67-63-0**, Isopropanol, uses **67-64-1**, Acetone, uses **75-05-8**, Acetonitrile, uses **78-93-3**, Butan-2-one, uses **108-93-0**, Cyclohexanol, uses **109-99-9**, Tetrahydrofuran, uses **127-19-5**, Dimethylacetamide
ROLE: NUU (Other use, unclassified); USES (Uses)
(solvent; preparation of cefdinir and its amorphous hydrate)

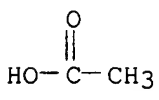
INDEX TERM: **7732-18-5**, Water, reactions
ROLE: NUU (Other use, unclassified); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(solvent; preparation of cefdinir and its amorphous hydrate)

IT **64-18-6**, Formic acid, reactions **64-19-7**, Acetic acid, reactions **7647-01-0**, Hydrochloric acid, reactions **7664-93-9**, Sulfuric acid, reactions
RL: RGT (Reagent); RACT (Reactant or reagent)
(for acid hydrolysis during preparation of cefdinir and its amorphous hydrate)

RN 64-18-6 HCAPLUS
CN Formic acid (7CI, 8CI, 9CI) (CA INDEX NAME)



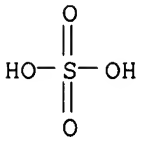
RN 64-19-7 HCAPLUS
CN Acetic acid (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 7647-01-0 HCAPLUS
CN Hydrochloric acid (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

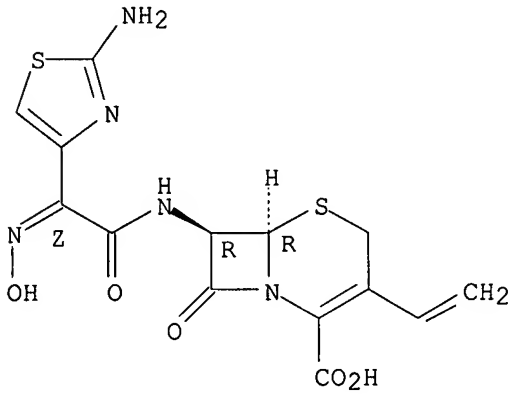
HCl

RN 7664-93-9 HCAPLUS
CN Sulfuric acid (8CI, 9CI) (CA INDEX NAME)



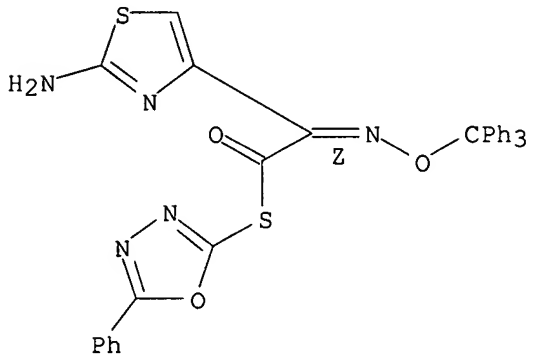
IT **91832-40-5P 696592-14-0P 696592-17-3P**
RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of cefdinir and its amorphous hydrate)
RN 91832-40-5 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[(2Z)-(2-amino-4-thiazolyl)(hydroxyimino)acetyl]amino]-3-ethenyl-8-oxo-, (6R,7R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



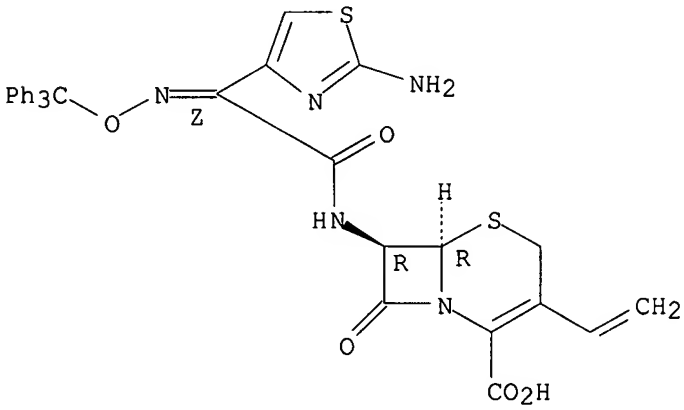
RN 696592-14-0 HCAPLUS
CN 4-Thiazoleethanethioic acid, 2-amino-α-[(triphenylmethoxy)imino]-, S-(5-phenyl-1,3,4-oxadiazol-2-yl) ester, (αZ)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



RN 696592-17-3 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[(2Z)-(2-amino-4-thiazolyl)[(triphenylmethoxy)imino]acetyl]amino]-3-ethenyl-8-oxo-, monopotassium salt, (6R,7R)- (9CI) (CA INDEX NAME)

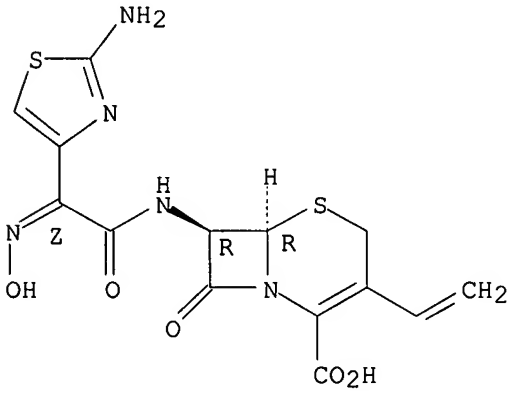
Absolute stereochemistry.
Double bond geometry as shown.



● K

IT **213978-34-8P**
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(preparation of cefdinir and its amorphous hydrate)
RN 213978-34-8 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[(2Z)-(2-amino-4-thiazolyl)(hydroxyimino)acetyl]amino]-3-ethenyl-8-oxo-, monohydrate, (6R,7R)- (9CI) (CA INDEX NAME)

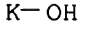
Absolute stereochemistry.
Double bond geometry as shown.



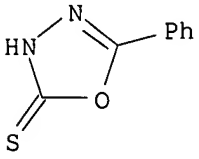
● H_2O

IT **1310-58-3**, Potassium hydroxide, reactions **3004-42-0 79349-82-9 128438-01-7 696592-20-8**
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of cefdinir and its amorphous hydrate)

RN 1310-58-3 HCAPLUS
CN Potassium hydroxide (K(OH)) (9CI) (CA INDEX NAME)

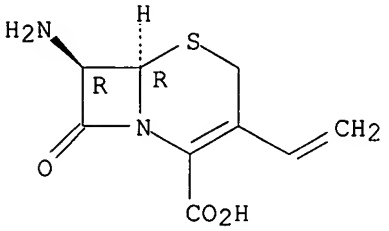


RN 3004-42-0 HCAPLUS
CN 1,3,4-Oxadiazole-2(3H)-thione, 5-phenyl- (9CI) (CA INDEX NAME)



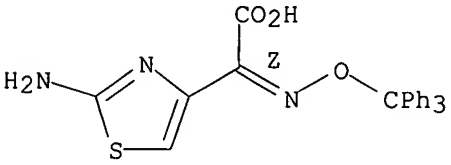
RN 79349-82-9 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-amino-3-ethenyl-8-oxo-, (6R,7R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 128438-01-7 HCAPLUS
CN 4-Thiazoleacetic acid, 2-amino-α-[(triphenylmethoxy)imino]-, (αZ)- (9CI) (CA INDEX NAME)

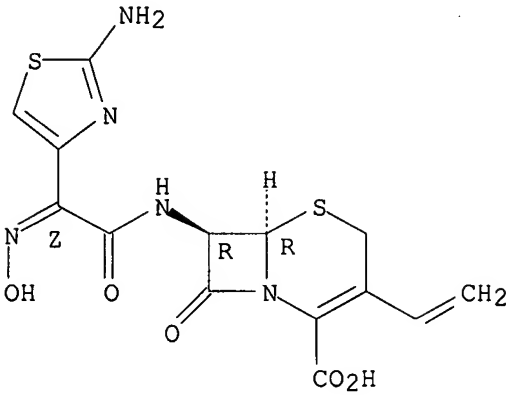
Double bond geometry as shown.



RN 696592-20-8 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[(2Z)-(2-amino-4-thiazolyl)(hydroxyimino)acetyl]amino]-3-ethenyl-8-oxo-, monoammonium salt, (6R,7R)- (9CI) (CA INDEX NAME)

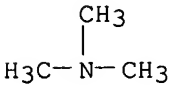
Absolute stereochemistry.

Double bond geometry as shown.

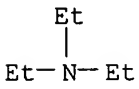


IT **75-50-3**, Trimethylamine, reactions **121-44-8**, Triethylamine, reactions **626-67-5**, N-Methylpiperidine **7087-68-5**, N,N-Diisopropylethylamine **68641-49-6**
RL: RGT (Reagent); RACT (Reactant or reagent)
(preparation of cefdinir and its amorphous hydrate)

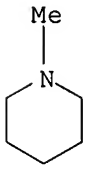
RN 75-50-3 HCAPLUS
CN Methanamine, N,N-dimethyl- (9CI) (CA INDEX NAME)



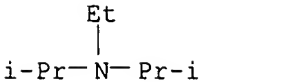
RN 121-44-8 HCAPLUS
CN Ethanamine, N,N-diethyl- (9CI) (CA INDEX NAME)



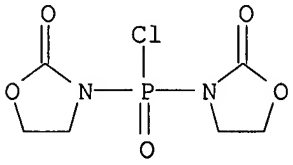
RN 626-67-5 HCAPLUS
CN Piperidine, 1-methyl- (8CI, 9CI) (CA INDEX NAME)



RN 7087-68-5 HCAPLUS
CN 2-Propanamine, N-ethyl-N-(1-methylethyl)- (9CI) (CA INDEX NAME)



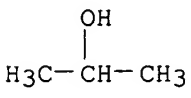
RN 68641-49-6 HCAPLUS
CN Phosphinic chloride, bis(2-oxo-3-oxazolidinyl)- (9CI) (CA INDEX NAME)



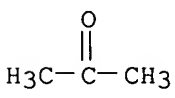
IT **64-17-5**, Ethanol, uses **67-56-1**, Methanol, uses
67-63-0, Isopropanol, uses **67-64-1**, Acetone, uses
75-05-8, Acetonitrile, uses **78-93-3**, Butan-2-one, uses
108-93-0, Cyclohexanol, uses **109-99-9**, Tetrahydrofuran,
uses **127-19-5**, Dimethylacetamide
RL: NUU (Other use, unclassified); USES (Uses)
(solvent; preparation of cefdinir and its amorphous hydrate)
RN 64-17-5 HCAPLUS
CN Ethanol (9CI) (CA INDEX NAME)

RN 67-56-1 HCAPLUS
CN Methanol (8CI, 9CI) (CA INDEX NAME)

RN 67-63-0 HCAPLUS
CN 2-Propanol (9CI) (CA INDEX NAME)

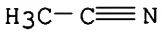


RN 67-64-1 HCAPLUS
CN 2-Propanone (9CI) (CA INDEX NAME)



RN 75-05-8 HCAPLUS

CN Acetonitrile (8CI, 9CI) (CA INDEX NAME)



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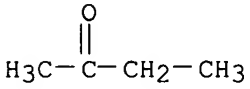
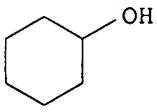
CN 2-Butanone (8CI, 9CI) (CA INDEX NAME)

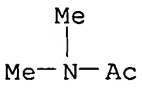


RN 108-93-0 HCAPLUS
CN Cyclohexanol (8CI, 9CI) (CA INDEX NAME)



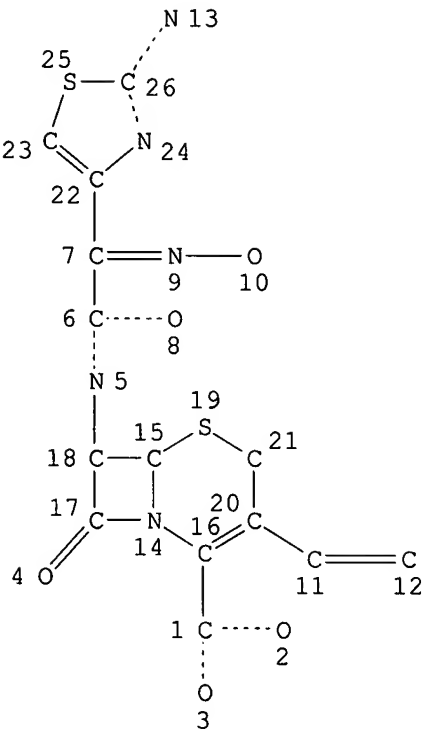
RN 109-99-9 HCAPLUS
CN Furan, tetrahydro- (7CI, 8CI, 9CI) (CA INDEX NAME)

RN 127-19-5 HCAPLUS
CN Acetamide, N,N-dimethyl- (8CI, 9CI) (CA INDEX NAME)



IT **7732-18-5**, Water, reactions
RL: NUU (Other use, unclassified); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(solvent; preparation of cefdinir and its amorphous hydrate)
RN 7732-18-5 HCAPLUS
CN Water (8CI, 9CI) (CA INDEX NAME)

=> d que l12
L5 STR



CA refs.

NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 26

STEREO ATTRIBUTES: NONE

L7	39	SEA	FILE=REGISTRY	FAM FUL	L5
L8	464	SEA	FILE=HCAPLUS	ABB=ON PLU=ON	L7
L9	4	SEA	FILE=HCAPLUS	ABB=ON PLU=ON	L7(L)AMOR?
L11	4	SEA	FILE=HCAPLUS	ABB=ON PLU=ON	L8 AND AMORPH?
L12	4	SEA	FILE=HCAPLUS	ABB=ON PLU=ON	L9 OR L11

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accessing the remaining file names entered.
ENTER A FILE NAME OR (IGNORE):end

=> d l12 ibib abs hitind hitstr 1-4

L12 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2006:122978 HCAPLUS
DOCUMENT NUMBER: 144:198746
TITLE: Preparation of stable **amorphous** cefdinir
INVENTOR(S): Sever, Nancy E.; Law, Devalina
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 18 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 2006029674	A1	20060209	US 2005-103183		20050411
PRIORITY APPLN. INFO.:			US 2004-560957P	P	20040409

AB The present invention relates to prepns. of stable **amorphous** cefdinir (7-[2-(2-aminothiazol-4-yl)-2-hydroxyiminoacetamide]-3-vinyl-3-cephem-4-carboxylic acid, syn isomer), methods for its preparation, and pharmaceutical compns. comprising the same. **Amorphous** cefdinir was isolated by evaporating a methanolic solution of cefdinir hydrate. The **amorphous** material was phys. stable.
INCL 424486000; 514202000; 540222000
CC 63-5 (Pharmaceuticals)
ST stable **amorphous** cefdinir prepn
IT Polyelectrolytes
(anionic; stable **amorphous** cefdinir)
IT Infection
(bacterial; stable **amorphous** cefdinir)
IT Polyelectrolytes
(cationic; stable **amorphous** cefdinir)
IT Solvents
(organic; stable **amorphous** cefdinir)
IT Solvents
(stable **amorphous** cefdinir)
IT Acrylic polymers, biological studies
Macromolecular compounds
Polymers, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(stable **amorphous** cefdinir)
IT 67-56-1, Methanol, uses
RL: NUU (Other use, unclassified); USES (Uses)
(stable **amorphous** cefdinir)
IT **213978-34-8**, Cefdinir monohydrate
RL: RCT (Reactant); RACT (Reactant or reagent)
(stable **amorphous** cefdinir)

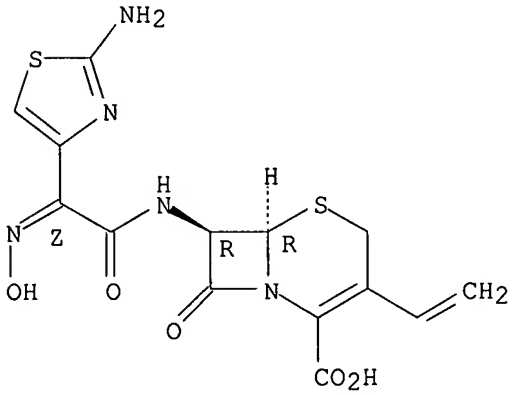
IT 9002-89-5, Polyvinyl alcohol 9003-39-8, Pvp 9004-53-9, Dextrin
9004-64-2, Hydroxypropyl cellulose) 9004-65-3, HPMC 9050-31-1,
Hydroxypropyl methyl cellulose phthalate 9050-36-6, Maltodextrin
24938-16-7, Eudragit epo 26008-54-8, Vinyl alcohol vinyl pyrrolidone
copolymer **91832-40-5**, Cefdinir
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(stable **amorphous** cefdinir)

IT **213978-34-8**, Cefdinir monohydrate
RL: RCT (Reactant); RACT (Reactant or reagent)
(stable **amorphous** cefdinir)

RN 213978-34-8 HCAPLUS

CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid,
7-[[(2Z)-(2-amino-4-thiazolyl)(hydroxyimino)acetyl]amino]-3-ethenyl-8-oxo-
, monohydrate, (6R,7R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



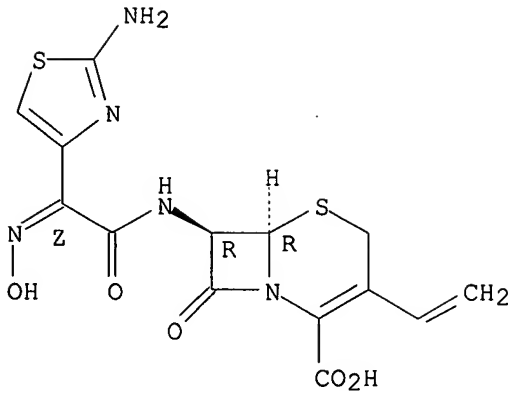
● H_2O

IT **91832-40-5**, Cefdinir
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(stable **amorphous** cefdinir)

RN 91832-40-5 HCAPLUS

CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid,
7-[[(2Z)-(2-amino-4-thiazolyl)(hydroxyimino)acetyl]amino]-3-ethenyl-8-oxo-
, (6R,7R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.

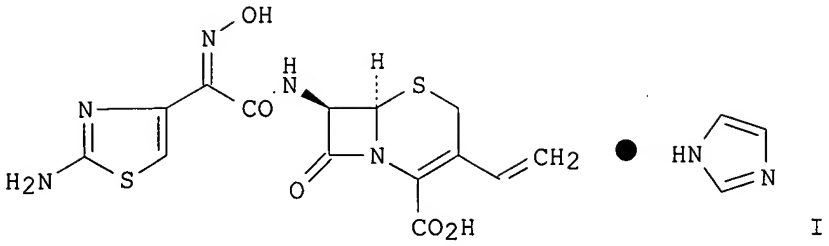


L12 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2006:100935 HCAPLUS
DOCUMENT NUMBER: 144:170819
TITLE: Cefdinir polymorphic forms, and imidazole salt
INVENTOR(S): Jaweed Mukarram, Siddiqui Mohammed; Khan, Rashid Abdul Rehman; Mane, Avinash Seshrao
PATENT ASSIGNEE(S): Wockhardt Limited, India
SOURCE: PCT Int. Appl., 33 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006010978	A1	20060202	WO 2004-IB2171	20040630

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

PRIORITY APPLN. INFO.: WO 2004-IB2171 20040630
GI



I

AB A new crystalline Cefdinir imidazole salt (I) and polymorphic forms C, D and an **amorphous** form of Cefdinir were disclosed.

IC ICM C07D501-22
ICS C07D501-04

CC 26-5 (Biomolecules and Their Synthetic Analogs)
Section cross-reference(s): 63

IT Crystallization
Polymorphism (crystal)
(preparation of the Cefdinir imidazole salt and **amorphous** and polymorphic crystalline forms C and D of Cefdinir, a β-lactam antibiotic)

IT Lactams
RL: PRP (Properties); PUR (Purification or recovery); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(β-, antibiotics; preparation of the Cefdinir imidazole salt and **amorphous** and polymorphic crystalline forms C and D of Cefdinir, a β-lactam antibiotic)

IT Antibiotics
(β-lactam; preparation of the Cefdinir imidazole salt and **amorphous** and polymorphic crystalline forms C and D of Cefdinir, a β-lactam antibiotic)

IT **91832-40-5P**, Cefdinir **874478-96-3P**, Cefdinir imidazole salt
RL: PRP (Properties); PUR (Purification or recovery); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(preparation of the Cefdinir imidazole salt and **amorphous** and polymorphic crystalline forms C and D of Cefdinir, a β-lactam antibiotic)

IT 68786-47-0, (Z)-2-(2-Tritylaminothiazol-4-yl)-2-trityloxyiminoacetic acid 79349-67-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of the Cefdinir imidazole salt and **amorphous** and polymorphic crystalline forms C and D of Cefdinir, a β-lactam antibiotic)

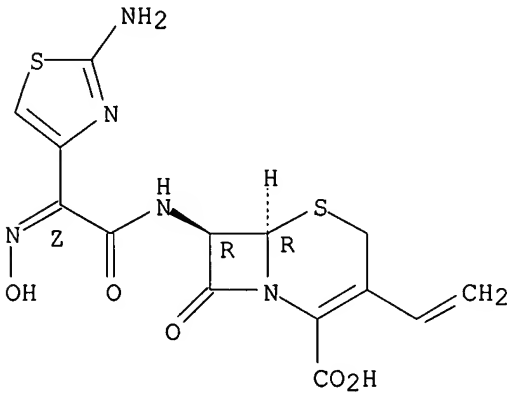
IT 143183-08-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of the Cefdinir imidazole salt and **amorphous** and polymorphic crystalline forms C and D of Cefdinir, a β-lactam antibiotic)

IT **91832-40-5P**, Cefdinir **874478-96-3P**, Cefdinir imidazole salt
RL: PRP (Properties); PUR (Purification or recovery); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

(preparation of the Cefdinir imidazole salt and **amorphous** and polymorphic crystalline forms C and D of Cefdinir, a β-lactam antibiotic)

RN 91832-40-5 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[(2Z)-(2-amino-4-thiazolyl)(hydroxyimino)acetyl]amino]-3-ethenyl-8-oxo-, (6R,7R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.

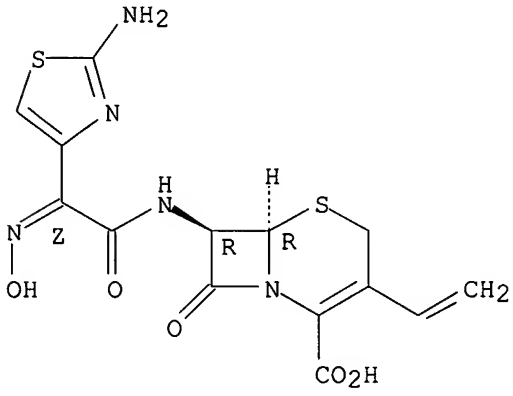


RN 874478-96-3 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[(2Z)-(2-amino-4-thiazolyl)(hydroxyimino)acetyl]amino]-3-ethenyl-8-oxo-, (6R,7R)-, compd. with 1H-imidazole (1:1) (9CI) (CA INDEX NAME)

CM 1

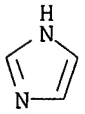
CRN 91832-40-5
CMF C14 H13 N5 O5 S2

Absolute stereochemistry.
Double bond geometry as shown.



CM 2

CRN 288-32-4
CMF C3 H4 N2



REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:1154562 HCAPLUS
DOCUMENT NUMBER: 143:427351
TITLE: Preparation of stable **amorphous** cefdinir
INVENTOR(S): Server, Nancy E.; Law, Devalina
PATENT ASSIGNEE(S): Abbott Laboratories, USA
SOURCE: PCT Int. Appl., 27 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005100368	A2	20051027	WO 2005-US12439	20050411
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2006069079	A1	20060330	US 2004-821695	20040927
PRIORITY APPLN. INFO.:			US 2004-821695 A	20040927

AB The present invention relates to stable **amorphous** cefdinir (syn isomer), methods for its preparation, and pharmaceutical compns. comprising the stable **amorphous** form. **Amorphous** cefdinir was characterized with Eudragit EPO.
IC ICM C07D501-00
CC 63-5 (Pharmaceuticals)
Section cross-reference(s): 28
ST **amorphous** cefdinir prepn stability
IT Crystal morphology
Drug delivery systems
(preparation of stable **amorphous** cefdinir)
IT 9002-89-5 9003-39-8, Polyvinylpyrrolidone 9004-53-9, Dextrin 9004-64-2, Hydroxypropyl cellulose 9004-65-3, Hydroxypropyl methyl cellulose 9050-31-1, Hydroxypropyl methyl cellulose phthalate 9050-36-6, Maltodextrin 24938-16-7, Eudragit EPO 26008-54-8, Vinyl alcohol-vinylpyrrolidone copolymer

RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process); USES (Uses)
(preparation of stable **amorphous** cefdinir)

IT **213978-34-8P**, Cefdinir monohydrate
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(preparation of stable **amorphous** cefdinir)

IT **91832-40-5P**, Cefdinir
RL: PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of stable **amorphous** cefdinir)

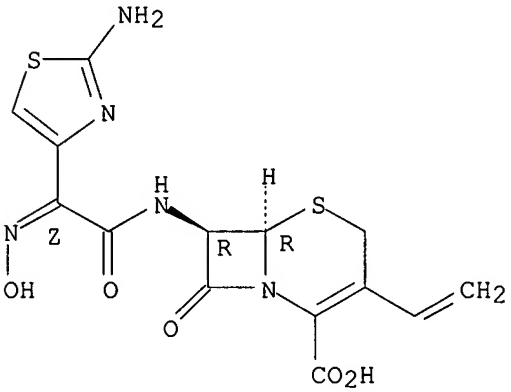
IT 91832-27-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of stable **amorphous** cefdinir)

IT **213978-34-8P**, Cefdinir monohydrate
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(preparation of stable **amorphous** cefdinir)

RN 213978-34-8 HCAPLUS

CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[(2Z)-(2-amino-4-thiazolyl)(hydroxyimino)acetyl]amino]-3-ethenyl-8-oxo-, monohydrate, (6R,7R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



● H_2O

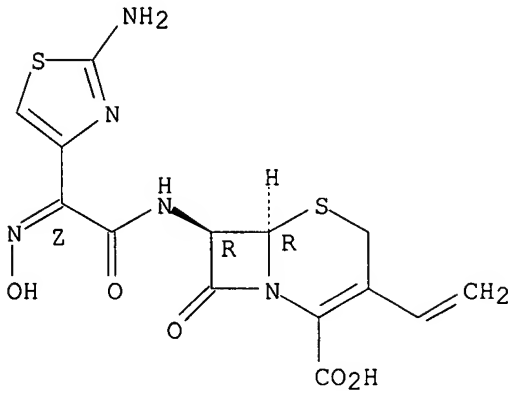
IT **91832-40-5P**, Cefdinir
RL: PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of stable **amorphous** cefdinir)

RN 91832-40-5 HCAPLUS

CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[(2Z)-(2-amino-4-thiazolyl)(hydroxyimino)acetyl]amino]-3-ethenyl-8-oxo-, (6R,7R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

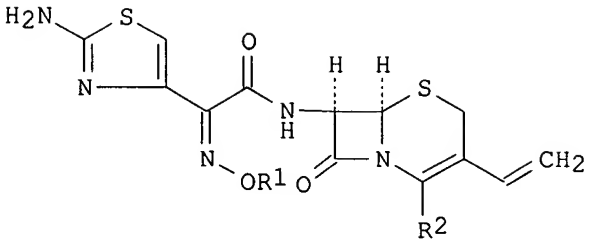
Double bond geometry as shown.



L12 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:453223 HCAPLUS
DOCUMENT NUMBER: 141:6966
TITLE: Process for preparing cefdinir and its **amorphous** hydrate
INVENTOR(S): Deshpande, Pandurang Balwant; Khadangale, Bhausaheb Pandharinath; Ramasubbu, Chandrasekaran
PATENT ASSIGNEE(S): Orchid Chemicals & Pharmaceuticals Ltd., India
SOURCE: PCT Int. Appl., 26 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
WO 2004046154	A1	20040603	WO 2003-IB5032		20031110
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW					
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG					
AU 2003276525	A1	20040615	AU 2003-276525		20031110
US 2006094703	A1	20060504	US 2005-532753		20050513
PRIORITY APPLN. INFO.:			IN 2002-MA848	A	20021115
			IN 2003-MA152	A	20030226
			WO 2003-IB5032	W	20031110

OTHER SOURCE(S): CASREACT 141:6966; MARPAT 141:6966
GI



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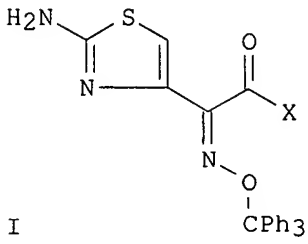


III

AB The present invention discloses a process for preparing cefdinir [I; R1 = H; R2 = CO2H (II)] and its monohydrate via condensing 7-amino-3-cephem-4-carboxylic acid with III (X = ester, thioester, halo, etc.) in the presence of a tertiary amine and an organic solvent, followed by treatment with a base to produce I [R1 = C(Ph)3; R2 = carboxylate ion (IV)], and hydrolyzing IV, using an acid in the presence of a solvent, to produce II. Thus, reaction between III (X = OH) and 2-mercapto-5-phenyl-1,3,4-oxadiazole yielded 2-mercapto-5-phenyl-1,3,4-oxadiazolyl-(Z)-(2-aminothiazol-4-yl)-2-(trityloxyimino) acetate, which, on condensation with 7-amino-3-vinyl-3-cephem-4-carboxylic acid and subsequent hydrolysis, afforded II.

IC ICM C07D501-06
ICS C07D501-22

CC 26-5 (Biomolecules and Their Synthetic Analogs)
Section cross-reference(s): 10, 63

IT Hydrolysis
(acid; during preparation of cefdinir and its **amorphous** hydrate)

IT Sulfonic acids, reactions
RL: RGT (Reagent); RACT (Reactant or reagent)
(aromatic/aliphatic; during preparation of cefdinir and its **amorphous** hydrate)

IT Condensation reaction
(between 2-mercapto-5-phenyl-1,3,4-oxadiazolyl-(Z)-(2-aminothiazol-4-yl)-2-(trityloxyimino)acetate, and 7-amino-3-vinyl-3-cephem-4-carboxylic acid in preparation of cefdinir and its **amorphous** hydrate)

IT Asymmetric synthesis and induction
(of cefdinir and its **amorphous** hydrate)

IT Solvents
(organic; during preparation of cefdinir and its **amorphous** hydrate)

IT Antibiotics
(β-lactam; preparation of cefdinir and its **amorphous** hydrate)

IT 64-18-6, Formic acid, reactions 64-19-7, Acetic acid, reactions 7647-01-0, Hydrochloric acid, reactions 7664-93-9, Sulfuric acid, reactions
RL: RGT (Reagent); RACT (Reactant or reagent)
(for acid hydrolysis during preparation of cefdinir and its **amorphous** hydrate)

IT **91832-40-5P** 696592-14-0P 696592-17-3P
RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of cefdinir and its **amorphous** hydrate)

IT **213978-34-8P**
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(preparation of cefdinir and its **amorphous** hydrate)

IT 1310-58-3, Potassium hydroxide, reactions 3004-42-0 79349-82-9

128438-01-7 **696592-20-8**
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of cefdinir and its **amorphous** hydrate)

IT 75-50-3, Trimethylamine, reactions 121-44-8, Triethylamine, reactions 626-67-5, N-Methylpiperidine 7087-68-5, N,N-Diisopropylethylamine 68641-49-6
RL: RGT (Reagent); RACT (Reactant or reagent)
(preparation of cefdinir and its **amorphous** hydrate)

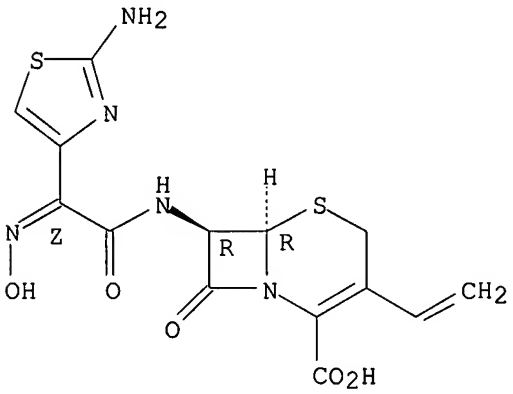
IT 64-17-5, Ethanol, uses 67-56-1, Methanol, uses 67-63-0, Isopropanol, uses 67-64-1, Acetone, uses 75-05-8, Acetonitrile, uses 78-93-3, Butan-2-one, uses 108-93-0, Cyclohexanol, uses 109-99-9, Tetrahydrofuran, uses 127-19-5, Dimethylacetamide
RL: NUU (Other use, unclassified); USES (Uses)
(solvent; preparation of cefdinir and its **amorphous** hydrate)

IT 7732-18-5, Water, reactions
RL: NUU (Other use, unclassified); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(solvent; preparation of cefdinir and its **amorphous** hydrate)

IT **91832-40-5P**
RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of cefdinir and its **amorphous** hydrate)

RN 91832-40-5 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[(2Z)-(2-amino-4-thiazolyl)(hydroxyimino)acetyl]amino]-3-ethenyl-8-oxo-, (6R,7R)- (9CI) (CA INDEX NAME)

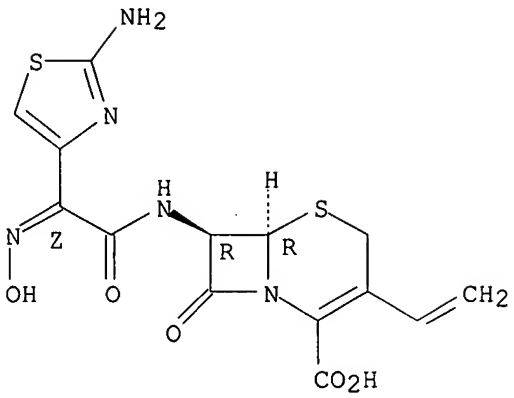
Absolute stereochemistry.
Double bond geometry as shown.



IT **213978-34-8P**
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(preparation of cefdinir and its **amorphous** hydrate)

RN 213978-34-8 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[(2Z)-(2-amino-4-thiazolyl)(hydroxyimino)acetyl]amino]-3-ethenyl-8-oxo-, monohydrate, (6R,7R)- (9CI) (CA INDEX NAME)

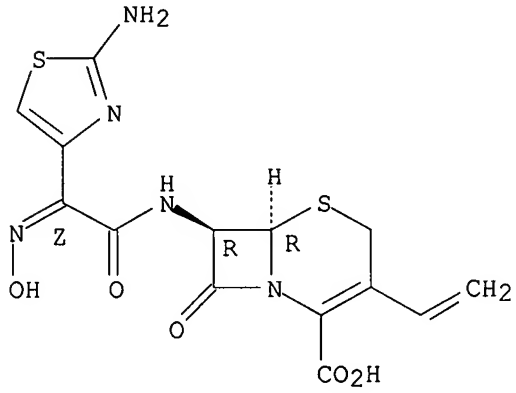
Absolute stereochemistry.
Double bond geometry as shown.



● H_2O

IT **696592-20-8**
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of cefdinir and its **amorphous** hydrate)
RN 696592-20-8 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid,
7-[[(2Z)-(2-amino-4-thiazolyl)(hydroxyimino)acetyl]amino]-3-ethenyl-8-oxo-
, monoammonium salt, (6R,7R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



● NH_3

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                 SEL RN

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     FILE 'HCAPLUS' ENTERED AT 12:14:35 ON 27 JUN 2006
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Other Databases

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L20             0 SEA ABB=ON  PLU=ON  ?CEFDININ? AND AMORPH?
L21             4 SEA ABB=ON  PLU=ON  ?CEFDINIR? AND AMORPH?

     INDEX 'ABI-INFORM, ADISCTI, AEROSPACE, AGRICOLA, ALUMINIUM, ANABSTR,
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              0*  FILE BIOTECHDS
              4   FILE CAPLUS
              1   FILE CASREACT
              0*  FILE CEABA-VTB
              0*  FILE CHEMINFORMRX
              0*  FILE CHEMSAFE
               SEA ?CEFDINIR? (5A) (AMORPH? OR NONCRYST? OR NON(W)CRYST?)
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L22              QUE ABB=ON  PLU=ON  ?CEFDINIR? (5A) (AMORPH? OR NONCRYST? OR
                 NON(W) CRYST?)
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=> fil hcap
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FILE COVERS 1907 - 27 Jun 2006 VOL 145 ISS 1
FILE LAST UPDATED: 26 Jun 2006 (20060626/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

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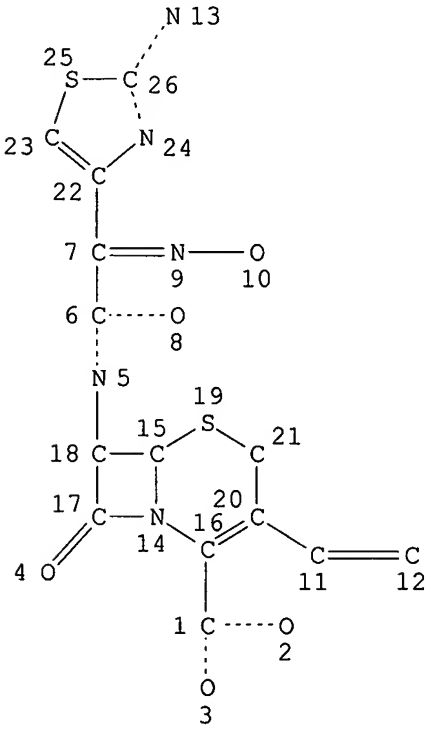
L5 STR



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GRAPH ATTRIBUTES:
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NUMBER OF NODES IS 26

STEREO ATTRIBUTES: NONE

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=> s l22
LEFT TRUNCATION IGNORED FOR FILE 'INVESTEXT'
L23         34 L22
Left truncation is not valid in the specified search field in the
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Examples: '?TERPEN?' would be searched as 'TERPEN?' and '?FLAVONOID'
would be searched as 'FLAVONOID.'

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Implied proximity is used in search fields indexed as single words,
for example, the Basic Index.

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PROCESSING COMPLETED FOR L12
PROCESSING COMPLETED FOR L23
L24 19 DUP REM L12 L23 (19 DUPLICATES REMOVED)
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ANSWERS '5-10' FROM FILE PCTFULL
ANSWERS '11-17' FROM FILE USPATFULL
ANSWERS '18-19' FROM FILE INVESTEXT

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REENTER DISPLAY FORMAT FOR ALL FILES (FILEDEFAULT):end

L24 ANSWER 5 OF 19 PCTFULL COPYRIGHT 2006 Univentio on STN
ACCESSION NUMBER: 2006053625 PCTFULL ED 20060530 EW 200621
TITLE (ENGLISH): CRYSTALLINE FROM OF CEFDINIR AMMONIUM SALT AS AN INTERMEDIATED FOR THE PREPARATION OF PURE CEFDINIR
TITLE (FRENCH): SEL D'AMMONIUM CRISTALLIN DE CEFDINIR UTILISE COMME INTERMEDIAIRE POUR LA PREPARATION D'UN CEFDINIR PUR
INVENTOR(S): GHETTI, Paolo, Via Dante, 5, I-20090 Segrate, IT;
POZZI, Giovanni, Via Belvedere, 19/F, I-20045 Besana Brianza (MI), IT;
BALSAMO, Gaetano, Via Amendola, 11, I-20096 Pioltello (MI), IT;
ALPEGIANI, Marco, Via Tolmezzo, 12/5, I-20132 Milano, IT;
CABRI, Walter, Via Pisacane, 5, I-20089 Rozzano (MI), IT
PATENT ASSIGNEE(S): ANTIBIOTICOS S.P.A., Strada Rivoltana Km 6/7, I-20090

Rodano (MI), IT
AGENT: BANFI, Paolo. et al.$, Bianchetti Bracco Minoja S.R.L., Via Plinio, 63, I-20129 Milano$, IT
LANGUAGE OF FILING: English
LANGUAGE OF PUBL.: English
DOCUMENT TYPE: Patent
PATENT INFORMATION:

NUMBER	KIND	DATE
WO 2006053625	A1	20060526

DESIGNATED STATES
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RW (OAPI): BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
APPLICATION INFO.: WO 2005-EP11385 A 20051024
PRIORITY INFO.: IT 2004-MI2004A002231 20041119

ABEN The invention relates to crystalline Cefdinir ammonium salt of formula (I).

ABFR L'invention concerne le sel d'ammonium cristallin de Cefdinir de la formule (I).

DETD Cefdinir ammonium salt is cited in WO 2004/046154 (examples 3 and 4) as starting product for the preparation of **amorphous Cefdinir** monohydrate,
but its recovery is not disclosed, nor is it given any indication as to its
physical form.
. . .
caused by pH stress (excessive amount of base,
high local pH following the base addition), which occurs in purification processes starting from **Cefdinir** (**amorphous**,
crystalline form A of the Patent
Fujisawa US4935507 and hydrate) or salts thereof (phosphate, sulfate, methanesulfonate and dicyclohexylamine).

L24 ANSWER 6 OF 19 PCTFULL COPYRIGHT 2006 Univentio on STN
ACCESSION NUMBER: 2006035291 PCTFULL ED 20060411 EW 200614
TITLE (ENGLISH): CRYSTALLINE FORMS OF CEFDINIR POTASSIUM
TITLE (FRENCH): FORMES CRISTALLINES DE CEFDINIR POTASSIUM
INVENTOR(S): PRASAD, Ashok, 147/9, Dr. Gupta's Flats, Kishangarh, Vasant Kunj, New Delhi, Delhi 110070, IN;
MAHESHWARI, Nitin, E/8-E, DDA Flats (MIG), Maya Puri, New Delhi, Delhi 110064, IN;
KUMAR, Yatendra, U-26/5, Phase-III, DLF Qutab Enclave, Gurgaon, Haryana 122001, IN;
PRASAD, Mohan, House No. P-3/3, Phase-II, DLF Qutab Enclave, Gurgaon, Haryana 122001, IN
PATENT ASSIGNEE(S): RANBAXY LABORATORIES LIMITED, Plot No. 90, Sector 32, Gurgaon, Haryana 122001, IN
LANGUAGE OF FILING: English
LANGUAGE OF PUBL.: English

DOCUMENT TYPE: Patent
PATENT INFORMATION:

	NUMBER	KIND	DATE
	WO 2006035291	A1	20060406

DESIGNATED STATES
W: AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KM KP KR KZ LC LK LR LS LT LU LV LY MA MD MG MK MN MW MX MZ NA NG NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SM SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
RW (ARIPO): BW GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW
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RW (OAPI): BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
APPLICATION INFO.: WO 2005-IB2858 A 20050927
PRIORITY INFO.: IN 2004-1854DEL2004 20040927

ABEN The present invention relates to a novel crystalline potassium salt of cefdinir - cefdinir potassium tetrahydrate, processes for its preparation, pharmaceutical compositions including cefdinir potassium tetrahydrate, and methods of treating bacterial infections using cefdinir potassium tetrahydrate. In addition, the present invention also relates to a mixture of cefdinir potassium dihydrate and cefdinir potassium tetrahydrate, processes for its preparation, pharmaceutical compositions including the mixture, and methods of treating bacterial infections using mixtures of cefdinir potassium dihydrate and cefdinir potassium tetrahydrate. Further it also relates to processes for preparing pure cefdinir and cefdinir potassium dihydrate from cefdinir potassium tetrahydrate.

ABFR La presente invention concerne un nouveau sel de potassium cristallin de cefdinir tetrahydrate de cefdinir potassium, des procedes de preparation de celui-ci, des compositions pharmaceutiques renfermant le tetrahydrate de cefdinir potassium et des methodes de traitement d'infections bacteriennes a l'aide de tetrahydrate de cefdinir potassium. Cette invention concerne en outre un melange de dihydrate de cefdinir potassium et de tetrahydrate de cefdinir potassium, des procedes de preparation de celui-ci, des compositions pharmaceutiques renfermant le melange et des methodes de traitement d'infections bacteriennes a l'aide de melanges de dihydrate de cefdinir potassium et de tetrahydrate de cefdinir potassium. Cette invention concerne egalement des procedes de preparation de cefdinir pur et de dihydrate de cefdinir potassium a partir de tetrahydrate de cefdinir potassium.

DETD . . . eleventh aspect may be obtained as crystal A as cited in US 4,935,507, which is incorporated herein by reference. Alternatively, an **amorphous** form of **cefdinir** similar to that produced by the method of US 4,559,334 may also be obtained via this purification process.

L24 ANSWER 7 OF 19 PCTFULL COPYRIGHT 2006 Univentio on STN
ACCESSION NUMBER: 2006018807 PCTFULL ED 20060331 EW 200608
TITLE (ENGLISH): CRYSTALLINE FORMS OF CEFDINIR
TITLE (FRENCH): FORMES CRISTALLINES DE CEFDINIR
INVENTOR(S): GADE, Sanjay, U-26/5, Phase - III||DLF Qutab Enclave, Gurgaon, Haryana 122001, IN;
ARYAN, Ram, Chander, 1066, Sector - A, Pocket - A,

Vasant Kunj, New Delhi, Delhi 110070, IN;
DUGGAL, Sanjam, U-26/5, Phase - III||DLF Qutab Enclave, Gurgaon, Haryana 122001, IN;
KUMAR, Satish, 7, Vallabh Apartments, Maniyasha, Maninagar (East), Ahmedabad, Gujarat 380008, IN;
KUMAR, Yatendra, U-26/5, Phase - III||DLF Qutab Enclave, Gurgaon, Haryana 122001, IN;
PANDYA, Bhargav, 7, Vallabh Apartments, Maniyasha, Maninagar (East), Ahmedabad, Gujarat 380008, IN;
MAHENDRU, Manu, 5733, Ground Floor, Sector - 38 West, Chandigarh, Chandigarh 160014, IN

PATENT ASSIGNEE(S): RANBAXY LABORATORIES LIMITED, Plot No. 90, Sector - 32, Gurgaon, Haryana 122 001, IN

LANGUAGE OF FILING: English
LANGUAGE OF PUBL.: English
DOCUMENT TYPE: Patent
PATENT INFORMATION:

NUMBER	KIND	DATE
WO 2006018807	A1	20060223

DESIGNATED STATES

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RW (ARIPO): BW GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW

RW (EAPO): AM AZ BY KG KZ MD RU TJ TM

RW (EPO): AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LT LU LV MC NL PL PT RO SE SI SK TR

RW (OAPI): BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG

APPLICATION INFO.: WO 2005-IB52691 A 20050815
PRIORITY INFO.: IN 2004-1508DEL2004 20040816
IN 2004-1646DEL2004 20040831
IN 2005-434DEL2005 20050228

ABEN The invention relates to processes for the preparation of crystalline polymorphic forms of cefdinir of formula (I). More particularly, it relates to the preparation of crystalline polymorphic forms of cefdinir designated as Forms B and C. The invention also relates to pharmaceutical compositions that include the polymorphic forms B and C, and the use of the compositions for treating bacterial infections.

ABFR L'invention concerne des procedes de preparation de formes polymorphes de cefdinir de formule (I). Cette invention concerne plus particulierement la preparation de formes polymorphes cristallines de cefdinir designees par les formes B et C. L'invention concerne egalement des compositions pharmaceutiques comprenant les formes polymorphes B et C et l'utilisation de ces compositions dans le traitement des infections bacteriennes.

DETD [51
H N S
2
N 0
H H
'S
N
H
H

[61 FORMULAI
[7] U.S. Patent No. 4,559,334 discloses a process for the preparation of **cefdinir** in
amorphous form by lyophilization. The amorphous form so produced is highly hygroscopic and therefore very difficult to formulate.

[12] International (PCT) Publication No. WO 04/46154 describes the **amorphous** monohydrate of **cefdinir** and a process for preparation thereof.

L24 ANSWER 8 OF 19 PCTFULL COPYRIGHT 2006 Univentio on STN
ACCESSION NUMBER: 2005121154 PCTFULL ED 20051228 EW 200551
TITLE (ENGLISH): PROCESS FOR THE PREPARATION OF CEFDINIR
TITLE (FRENCH): PROCEDE DE PREPARATION DE CEFDINIR
INVENTOR(S): KUMAR, Raaj, 1525 Summer Ridge Road, Mexico, MO 65265, US [IN, US]
PATENT ASSIGNEE(S): TEVA PHARMACEUTICAL INDUSTRIES LTD., 5 Basel Street, P.O. Box 3190, 49131 Petah Tiqva, IL [IL, IL], for all designates States except BB US;
TEVA PHARMACEUTICALS USA, INC., 1090 Horsham Road, P.O. Box 1090, North Wales, PA 19454, US [US, US], for BB only;
KUMAR, Raaj, 1525 Summer Ridge Road, Mexico, MO 65265, US [IN, US], for US only
AGENT: BRAINARD, Charles, R.$, Kenyon & Kenyon, One Broadway, New York, NY 10004-1050$, US
LANGUAGE OF FILING: English
LANGUAGE OF PUBL.: English
DOCUMENT TYPE: Patent
PATENT INFORMATION:

NUMBER	KIND	DATE
WO 2005121154	A1	20051222

DESIGNATED STATES
W: AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KM KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NG NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SM SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
RW (ARIPO): BW GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW
RW (EAPO): AM AZ BY KG KZ MD RU TJ TM
RW (EPO): AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LT LU MC NL PL PT RO SE SI SK TR
RW (OAPI): BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
APPLICATION INFO.: WO 2005-US20141 A 20050608
PRIORITY INFO.: US 2004-60/578,203 20040608
ABEN Provided are intermediates for use in synthesis of Cefdinir and processes for preparing cefdinir with such intermediates.
ABFR L'invention concerne des intermediaires a utiliser dans la synthese du Cefdinir et des procedes de preparation du Cefdinir au moyen de ces intermediaires.

DETD Pharmaceutical compositions of the present invention contain crystalline **cefdinir**, or **cefdinir amorphous**. The **cefdinir** prepared by the processes of the present invention are ideal for pharmaceutical formulation. In addition to the active

ingredient(s), the pharmaceutical compositions. . .

L24 ANSWER 9 OF 19 PCTFULL COPYRIGHT 2006 Univentio on STN
ACCESSION NUMBER: 2003050124 PCTFULL ED 20030623 EW 200325
TITLE (ENGLISH): CRYSTALLINE CEFDINIR POTASSIUM DIHYDRATE
TITLE (FRENCH): DIHYDRATE DE CEFDINIR POTASSIUM CRISTALLIN
INVENTOR(S): KUMAR, Yatendra, U-26/5, Phase - III, DLF Qutab Enclave, Gurgaon 122 001, Haryana, IN [IN, IN];
PRASAD, Mohan, P-3/3, Phase - II, DLF Qutab Enclave, Gurgaon 122 001, Haryana, IN [IN, IN];
PRASAD, Ashok, 147/9, Dr. Gupta's Flat, Kishangarh, Vasant Kunj, New Delhi 110 070, IN [IN, IN];
SINGH, Shailendra, Kumar, A-35/30, Phase-I, DLF Qutab Enclave, Gurgaon 122 001, Haryana, IN [IN, IN];
KUMAR, Neela, Praveen, House No. 16-2-705/9/A/8, Professors Colony, Malakpet, Hyderabad 500 036, Andhra Pradesh, IN [IN, IN]
PATENT ASSIGNEE(S): RANBAXY LABORATORIES LIMITED, 19, Nehru Place, New Delhi 110 019, IN [IN, IN], for all designates States except US;
KUMAR, Yatendra, U-26/5, Phase - III, DLF Qutab Enclave, Gurgaon 122 001, Haryana, IN [IN, IN], for US only;
PRASAD, Mohan, P-3/3, Phase - II, DLF Qutab Enclave, Gurgaon 122 001, Haryana, IN [IN, IN], for US only;
PRASAD, Ashok, 147/9, Dr. Gupta's Flat, Kishangarh, Vasant Kunj, New Delhi 110 070, IN [IN, IN], for US only;
SINGH, Shailendra, Kumar, A-35/30, Phase-I, DLF Qutab Enclave, Gurgaon 122 001, Haryana, IN [IN, IN], for US only;
KUMAR, Neela, Praveen, House No. 16-2-705/9/A/8, Professors Colony, Malakpet, Hyderabad 500 036, Andhra Pradesh, IN [IN, IN], for US only
AGENT: RANBAXY LABORATORIES LIMITED$, DESHMUKH, Jayadeep, R., 600 College Road East, Suite 2100, Princeton, NJ 08540$, US
LANGUAGE OF FILING: English
LANGUAGE OF PUBL.: English
DOCUMENT TYPE: Patent
PATENT INFORMATION:

NUMBER	KIND	DATE
WO 2003050124	A1	20030619

DESIGNATED STATES
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
RW (ARIPO): GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
RW (EAPO): AM AZ BY KG KZ MD RU TJ TM
RW (EPO): AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SI SK TR
RW (OAPI): BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
APPLICATION INFO.: WO 2002-IB5315 A 20021212
PRIORITY INFO.: IN 2001-1242/DEL/2001 20011213
ABEN The present invention relates to a novel crystalline cefdinir potassium dihydrate, to a process for its preparation and to a method of preparing

pure cefdinir via the crystalline salt.

ABFR La presente invention se rapporte a un nouveau dihydrate de cefdinir potassium cristallin, a un procede de preparation de ce dernier, et a un procede de preparation de cefdinir pur par l'intermediaire du sel cristallin.

DETD 4,935,507, which is incorporated herein by reference. Alternatively, **amorphous** form of
cefdinir similar to that produced by the method described in U.S. Patent No. 4,559,334
may also be obtained via the purification process. . .

L24 ANSWER 10 OF 19 PCTFULL COPYRIGHT 2006 Univentio on STN
ACCESSION NUMBER: 2002098884 PCTFULL ED 20021218 EW 200250
TITLE (ENGLISH): CRYSTALLINE ACID SALTS OF CEFDINIR AND PROCESS FOR PREPARING CEFDINIR USING SAME
TITLE (FRENCH): SELS D'ACIDE CRISTALLIN DE CEFDINIR ET PROCEDE DE PREPARATION DE CEFDINIR AU MOYEN DE CES SELS
INVENTOR(S): LEE, Gwan, Sun, Keukdong Apt. 2-806, Karak-dong, Songpa-gu, Seoul 138-160, KR [KR, KR];
CHANG, Young, Kil, #34-4, Samjeon-dong, Songpa-gu, Seoul 138-180, KR [KR, KR];
KIM, Hong, Sun, #290-30, Junghwa-1-dong, Jungrang-gu, Seoul 131-121, KR [KR, KR];
PARK, Chul, Huyn, Hansoljugong 5danji 511-1005 Jeongja-dong, Bundang-gu, Seongnam-si, Kyungki-do 463-010, KR [KR, KR];
PARK, Gha, Seung, #1273-12, Ilsan-4-dong, Ilsan-gu, Goyang-si 411-314, Kyungki-do, KR [KR, KR];
KIM, Cheol, Kyung, Jugong-2-cha Apt. 204-402, #111-1, Deokso-ri, Wabu-eup, Namyangju-si 472-900, Kyungki-do, KR [KR, KR]
PATENT ASSIGNEE(S): HANMI PHARM. CO., LTD., #893-5, Hajeo-ri, Paltan-myeon, Hwaseong-gun, Kyungki-do 445-910, KR [KR, KR], for all designates States except US;
LEE, Gwan, Sun, Keukdong Apt. 2-806, Karak-dong, Songpa-gu, Seoul 138-160, KR [KR, KR], for US only;
CHANG, Young, Kil, #34-4, Samjeon-dong, Songpa-gu, Seoul 138-180, KR [KR, KR], for US only;
KIM, Hong, Sun, #290-30, Junghwa-1-dong, Jungrang-gu, Seoul 131-121, KR [KR, KR], for US only;
PARK, Chul, Huyn, Hansoljugong 5danji 511-1005 Jeongja-dong, Bundang-gu, Seongnam-si, Kyungki-do 463-010, KR [KR, KR], for US only;
PARK, Gha, Seung, #1273-12, Ilsan-4-dong, Ilsan-gu, Goyang-si 411-314, Kyungki-do, KR [KR, KR], for US only;
KIM, Cheol, Kyung, Jugong-2-cha Apt. 204-402, #111-1, Deokso-ri, Wabu-eup, Namyangju-si 472-900, Kyungki-do, KR [KR, KR], for US only
AGENT: JANG, Seong, Ku$, 17th Fl., KEC Building, #275-7, Yangjae-dong, Seocho-ku, Seoul 137-130$, KR
LANGUAGE OF FILING: English
LANGUAGE OF PUBL.: English
DOCUMENT TYPE: Patent
PATENT INFORMATION:

NUMBER	KIND	DATE
WO 2002098884	A1	20021212

DESIGNATED STATES
W: CN JP US
RW (EPO): AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
APPLICATION INFO.: WO 2002-KR1064 A 20020605
PRIORITY INFO.: KR 2001-2001/31339 20010605
ABEN High purity cefdinir is prepared in a high yield by a process comprising the steps
of: treating a cefdinir intermediate with a formic acid-sulfuric acid mixture
or a formic acid-methanesulfonic acid mixture to obtain a crystalline salt of
cefdinir and reacting the crystalline salt with a base in a solvent.
ABFR Selon l'invention, du cefdinir pur est prepare en grande quantite par le biais d'un procede consistant: a traiter un intermediaire de cefdinir avec un melange d'acide sulfurique et d'acide formique pour un melange d'acide methansulfonique et d'acide formique afin d'obtenir un sel cristallin de cefdinir, et a faire reagir ce sel cristallin avec une base dans un solvant.

DETD US Patent No. 4,935,507 discloses a method of producing crystalline cefdinir, which comprises the steps of reacting **amorphous cefdinir** with an acid
in a solvent and adding a non-polar solvent thereto to precipitate an acid-added
salt of cefdinir, e.g., cefflinirMl, cefdinir.H2SO4. . .
. . .
The acid salts of cefdinir prepared in accordance with the present invention are novel crystalline monosulfuric acid and monomethanesulfonic
acid salt of **cefdinir**, unlike the **amorphous** acid
salts disclosed in the prior art.

L24 ANSWER 11 OF 19 USPATFULL on STN DUPLICATE 3
ACCESSION NUMBER: 2006:111756 USPATFULL
TITLE: Novel amorphous hydrate of a cephalosporin antibiotic
INVENTOR(S): Deshpande, Pandurang Balwant, C-' "CEEBROS". Plot No. 32 (New) 1st Avenue,, Indira nagar,, Chennai, INDIA 600 020
Khadangale, Bhausaheb Pandharinath, Chennai, INDIA
Ramasubbu, Chandrasekaran, Chennai, INDIA
PATENT ASSIGNEE(S): Orchid Chemicals and Pharmaceuticals Ltd., Chennai, INDIA, 600 034 (non-U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 2006094703	A1	20060504	
APPLICATION INFO.:	US 2003-532753	A1	20031110	(10)
	WO 2003-IB5032		20031110	
			20050513	PCT 371 date

	NUMBER	DATE
PRIORITY INFORMATION:	IN 2002-8482002	20021115
	IN 2003-1522003	20030226

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: OLIFF & BERRIDGE, PLC, P.O. BOX 19928, ALEXANDRIA, VA, 22320, US

NUMBER OF CLAIMS: 14
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 1 Drawing Page(s)
LINE COUNT: 456
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB ##STR1## A process for the preparation of cefdinir of the formula (I) the said process comprising the steps of: i) condensing 7-amino-3-cephem-4-carboxylic acid of the formula (XII) wherein R1 is as defined above with compound of the formula (XIII) in the presence of a tertiary amine and an organic solvent, followed by treatment with a base to produce a salt of compound formula (XIV), wherein M+ is a counter ion and ii) hydrolyzing the compound of the formula (XIV) using an acid in the presence of a solvent to produce cefdinir of formula (I).

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
SUMM . . . present invention relates to a novel amorphous hydrate of a cephalosporin antibiotic. More particularly, the present invention relates to novel **amorphous** monohydrate of **cefdinir** of the formula (I). ##STR2## The present invention also provides a process for the preparation of the novel **amorphous** monohydrate of **cefdinir** of formula (I).
SUMM The main objective of the present invention is to provide a novel **amorphous** monohydrate of **cefdinir** which has very good bioavailability and useful in developing different dosage forms.
SUMM Another objective of the present invention is to provide a commercially viable process for the preparation of **cefdinir** and novel **amorphous** monohydrate of **cefdinir** of the formula (I), which would be easy to implement on manufacturing scale.
SUMM Another embodiment of the present invention provides a novel **amorphous** monohydrate of **cefdinir** of the formula (I). ##STR8##
SUMM In yet another embodiment of the present invention, there is provided a process for the preparation of novel **amorphous** monohydrate of **cefdinir** of the formula (I) comprising hydrolyzing the compound of the formula (XV) ##STR9## comprising the steps of:
i) adding. . . to 40° C.,
iii) cooing the resulting solution rapidly to -40 to 0° and
iv) isolating the novel **amorphous** monohydrate of **cefdinir** of the formula (I).
SUMM In yet another embodiment of the present invention, there is provided a process for the preparation of novel **amorphous** monohydrate of **cefdinir** of the formula (I) comprising hydrolyzing the compound of the formula (XV) ##STR10## comprising the steps of
i) adding. . . addition of an acid at a temperature in the range of 10 to 40° C.,
iv) isolating the novel **amorphous** monohydrate of **cefdinir** of the formula (I).
DETD . . . observation that rapid cooling of the aqueous solvent solution of cefdinir to low temperatures and adding the acid rapidly produces **amorphous cefdinir**. The technique can be achieved either by cooling the aqueous solvent solution to low temperatures and adding the acid rapidly. . .
DETD . . . be markedly attractive, both from commercial point of view, as well as from manufacturing viewpoint and affords good quality of **amorphous cefdinir** of the formula (I).
CLM What is claimed is:
9. A novel **amorphous** monohydrate of **cefdinir** of the formula (I) ##STR18##

10. The process for the preparation of novel **amorphous** monohydrate of **cefdinir** of the formula (I) as claimed in claim 9, comprising hydrolyzing the compound of the formula (XV) ##STR19## comprising the. . . of 10 to 40° C., iii) cooing the resulting solution rapidly to -40 to 0° and iv) isolating the novel **amorphous** monohydrate of **cefdinir** of the formula (I).

11. The process for the preparation of novel **amorphous** monohydrate of **cefdinir** of the formula (I) as claimed in claim 9, comprising hydrolyzing the compound of the formula (XV) ##STR20## comprising the. . . rapid addition of an acid at a temperature in the range of 10 to 40° C., iv) isolating the novel **amorphous** monohydrate of **cefdinir** of the formula (I).

L24 ANSWER 12 OF 19 USPATFULL on STN DUPLICATE 4
ACCESSION NUMBER: 2006:81084 USPATFULL
TITLE: Stable **amorphous cefdinir**
INVENTOR(S): Sever, Nancy E., Arlington Heights, IL, UNITED STATES
Law, Devalina, Libertyville, IL, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2006069079	A1	20060330
APPLICATION INFO.:	US 2004-821695	A1	20040927 (10)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: ROBERT DEBERARDINE, ABBOTT LABORATORIES, 100 ABBOTT PARK ROAD, DEPT. 377/AP6A, ABBOTT PARK, IL, 60064-6008, US
NUMBER OF CLAIMS: 10
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 16 Drawing Page(s)
LINE COUNT: 520
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention relates to stable amorphous 7-[2-(2-aminothiazol-4-yl)-2-hydroxyiminoacetamide]-3-vinyl-3-cephem-4-carboxylic acid (syn isomer), methods for its preparation, and pharmaceutical compositions comprising stable amorphous 7-[2-(2-aminothiazol-4-yl)-2-hydroxyiminoacetamide]-3-vinyl-3-cephem-4-carboxylic acid (syn isomer).

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
TI Stable **amorphous cefdinir**
SUMM The present invention provides a stable **amorphous Cefdinir** as well as formulations thereof, methods for their preparation, and pharmaceutical compositions and uses thereof. Pharmaceutical compositions comprising cefdinir are. . .
DRWD FIG. 2: X-ray pattern of **amorphous Cefdinir**
DRWD FIG. 3: FTIR of **amorphous Cefdinir**
DRWD FIG. 4: TGA scan of **Amorphous Cefdinir**
DRWD FIG. 5: TGA thermogram of **amorphous Cefdinir** during an isothermal hold at 25° C.
DRWD FIG. 7: X-ray pattern of **amorphous Cefdinir** with Eudragit EPO
DRWD FIG. 8: FT-IR spectrum of **amorphous Cefdinir**/EPO and crystalline **Cefdinir**
DRWD FIG. 9: FT-IR spectrum of **amorphous Cefdinir**/EPO, **amorphous Cefdinir**, and Eudragit EPO

DRWD FIG. 10: TGA scan of **Amorphous Cefdinir** with Eudragit EPO

DRWD FIG. 11: TGA thermogram of **amorphous Cefdinir** in Eudragit EPO during an isothermal hold at 25° C.

DRWD FIG. 13: FT-IR spectrum of **amorphous Cefdinir**/PVP and crystalline **Cefdinir**

DRWD FIG. 14: FT-IR spectra of **amorphous Cefdinir**/PVP, **amorphous** Cedfinir, and PVP

DRWD FIG. 15: TGA scan of **Amorphous Cefdinir** in PVP

DRWD FIG. 16: TGA thermogram **amorphous Cefdinir** in PVP during an isothermal hold at 25° C.

DETD **Amorphous Cefdinir**

DETD **Amorphous Cefdinir** was isolated by evaporating a methanolic solution. The amorphous material was physically stable.

DETD . . . spectrum is an average of 64 scans at 4 cm.sup.-1 resolution. FIG. 3 compares the spectra of the crystalline and **amorphous Cefdinir** powders. The spectrum showed peaks at locations consistent with the crystalline material indicating that the amorphous material is chemically similar. . .

DETD **Amorphous Cefdinir** with Eudragit EPO

DETD Stable **amorphous Cefdinir** with Eudragit EPO was made and isolated by evaporating a methanolic solution. The amorphous material was physically stable.

DETD Characterization of **Amorphous Cefdinir** with Eudragit EPO

DETD . . . the FT-IR spectrum, the spectrum is an average of 64 scans at 4 cm.sup.- resolution. A comparison of the crystalline **Cefdinir** and the **amorphous Cefdinir**/Eudragit EPO sample is shown in FIG. 8. The spectra are similar and confirm the presence of **Cefdinir** in the **amorphous** material. As shown in FIG. 9, the Cefdinir/Eudragit EPO powder showed peaks at locations consistent with both the **Amorphous Cefdinir** and Eudragit EPO.

DETD **Amorphous Cefdinir** with PVP

DETD **Amorphous cefdinir** with PVP was made and isolated by evaporating a methanolic solution. The amorphous material was physically stable.

DETD Characterization **Amorphous Cefdinir** with PVP

DETD . . . the FT-IR analysis, the spectrum is an average of 64 scans at 4 cm.sup.-1 resolution. A comparison of the crystalline **Cefdinir** and the **amorphous Cefdinir**/PVP sample is shown in FIG. 13. The spectra are similar and confirm the presence of **Cefdinir** in the **amorphous** material. As shown in FIG. 14, the Cefdinir/PVP powder showed peaks at locations consistent with both the **Amorphous Cefdinir** and PVP. Due to the large amount of PVP present (80 wt %), the spectrum of the **amorphous Cefdinir**/PVP is more similar to that of PVP.

DETD The process for preparation of stable **amorphous cefdinir** is critical. The use of the combination of cefdinir monohydrate and methanol allows rapid dissolution rate and avoids chemical degradation.. . .

DETD Compositions comprising **amorphous cefdinir** are within the scope of this invention. In additon, formulations comprising the amorphous material with polymers such as, but not limited to, PVP and Eudragit, as well as methods of preparing stable **amorphous cefdinir** and formulations thereof are also within the scope of the present invention.

CLM What is claimed is:

4. A pharmaceutical composition comprising compound of claim 1 wherein the stable **amorphous cefdinir** is combined with a

polymer.

5. A pharmaceutical composition comprising compound of claim 1 wherein the stable **amorphous cefdinir** is combined with a **amorphous** anionic polymer with an acid dissociation constant greater than 2.

7. A pharmaceutical composition comprising compound of claim 1 wherein the stable **amorphous cefdinir** is combined with an **amorphous** polymer.

9. A process for producing stable **amorphous cefdinir** comprising combining **cefdinir** monohydrate in a methanolic solution and evaporating the solution.

10. A process for producing stable **amorphous cefdinir** comprising combining **cefdinir** monohydrate in an organic solvent in which the solubility of cefdinir monohydrtae isw greater than 0.5 mg/ml and evaoporating the. . .

L24 ANSWER 13 OF 19 USPATFULL on STN
ACCESSION NUMBER: 2006:28565 USPATFULL
TITLE: Crystalline anhydrous cefdinir and crystalline cefdinir hydrates
INVENTOR(S): Law, Devalina, Libertyville, IL, UNITED STATES
Henry, Rodger F., Wildwood, IL, UNITED STATES
Lou, Xiaochun, Long Grove, IL, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2006025399	A1	20060202
APPLICATION INFO.:	US 2005-177202	A1	20050708 (11)

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 2005-72568, filed on 3 Mar 2005, PENDING

	NUMBER	DATE
PRIORITY INFORMATION:	US 2004-553643P	20040316 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: ROBERT DEBERARDINE, ABBOTT LABORATORIES, 100 ABBOTT PARK ROAD, DEPT. 377/AP6A, ABBOTT PARK, IL, 60064-6008, US
NUMBER OF CLAIMS: 65
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 8 Drawing Page(s)
LINE COUNT: 2596
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A novel crystalline cefdinir anhydrate and novel crystalline cefdinir hydrates, ways to make them and use them, compositions comprising them and made with them, and methods of treatment using them are disclosed.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
DETD The terms "cefdinir" and "a **cefdinir**" as used herein, mean **amorphous cefdinir**, a crystalline **cefdinir** anhydrate, a crystalline cefdinir lower hydrate and iso-structural hydrates thereof, crystalline cefdinir trihemihydrate with or without surface water, microcrystalline cefdinir,. . .
DETD . . . mixtures comprising one or more than one crystalline cefdinirs

of this invention in combination with one or more than one **cefdinirs** including, but not limited to, **amorphous cefdinir**, microcrystalline **Cefdinir**, **Cefdinir** Crystalline Form A, a crystalline cefdinir having a water content of 4.11%, when measured with radiation at 1.54178 Å, comprising. . .

DETD A cefdinir may be administered with or without an excipient and with or without **amorphous cefdinir**. Excipients include but are not limited to, for example, encapsulating materials and additives such as absorption accelerators, antioxidants, binders, buffers,. . .

DETD **Amorphous cefdinir** may be prepared as described in U.S. Pat. No. 4,559,334, of which column 2, line 15 to column 11 line. . .

DETD It is meant to be understood that **amorphous cefdinir**, a crystalline **cefdinir** anhydrate, a crystalline cefdinir lower hydrate or an iso-structural hydrates thereof, crystalline cefdinir trihemihydrate with or without surface water, microcrystalline. . .

L24 ANSWER 14 OF 19 USPATFULL on STN

ACCESSION NUMBER:	2005:158972 USPATFULL		
TITLE:	Novel crystalline form of cefdinir		
INVENTOR(S):	Dandala, Ramesh, Hyderabad, INDIA Sivakumaran, Meenakshisunderam, Hyderabad, INDIA		
	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2005137182	A1	20050623
APPLICATION INFO.:	US 2004-976230	A1	20041029 (10)
RELATED APPLN. INFO.:	Continuation-in-part of Ser. No. US 2004-634978, filed on 24 Feb 2004, PENDING		
	NUMBER	DATE	
PRIORITY INFORMATION:	IN 2003-4402003	20030602	
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	APPLICATION		
LEGAL REPRESENTATIVE:	WINSTON & STRAWN LLP, 1700 K STREET, N.W., WASHINGTON, DC, 20006, US		
NUMBER OF CLAIMS:	22		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	4 Drawing Page(s)		
LINE COUNT:	493		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention relates to novel crystalline form of Cefdinir, 7β-[(Z)-2-(2-amino-4-thiazolyl)-2-hydroxyiminoacetamido]-3-vinyl-3-cephem-4-carboxylic acid, herein referred as cefdinir crystal B, processes for preparing cefdinir crystal B, and the incorporation of cefdinir crystal B in pharmaceutical compositions.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

SUMM . . . that offered better filtration rate, high purity and stable cefdinir suitable for pharmaceutical preparation. This material was prepared by treating **amorphous cefdinir** with sodium bicarbonate solution and the resulting aqueous solution was subjected to column chromatography and then adjusting the pH between 1-2 at 35-40° C. followed by cooling to obtain **cefdinir** crystal A. Alternatively, **amorphous cefdinir** was dissolved in methanol and to this solution added water at 35° C., stirred and allowed to stand at room. . .

L24 ANSWER 15 OF 19 USPATFULL on STN
ACCESSION NUMBER: 2005:93576 USPATFULL
TITLE: Crystalline cefdinir potassium dihydrate
INVENTOR(S): Kumar, Yatendra, Gurgaon, INDIA
Prasad, Mohan, Gurgaon, INDIA
Prasad, Ashok, New Delhi, INDIA
Singh, Shailendra Kumar, Gurgaon, INDIA
Kumar, Neela Praveen, Hyderabad, INDIA

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 2005080255	A1	20050414	
APPLICATION INFO.:	US 2003-498406	A1	20021212	(10)
	WO 2002-IB5315		20021212	

	NUMBER	DATE
PRIORITY INFORMATION:	IN 2001-12422001	20011213

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: Jayadeep R Deshmukh, Ranbaxy Inc, Suite 2100, 600 College Road East, Princeton, NJ, 08540, US
NUMBER OF CLAIMS: 19
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Page(s)
LINE COUNT: 203
AB The present invention relates to a novel crystalline cefdinir potassium dihydrate, to a process for its preparation and to a method of preparing pure cefdinir via the crystalline salt.

DETD . . . may be obtained as crystal A as described in U.S. Pat. No. 4,935,507, which is incorporated herein by reference. Alternatively, **amorphous** form of **cefdinir** similar to that produced by the method described in U.S. Pat. No. 4,559,334 may also be obtained via the purification. . .

L24 ANSWER 16 OF 19 USPATFULL on STN
ACCESSION NUMBER: 2004:307880 USPATFULL
TITLE: Novel crystalline form of cefdinir
INVENTOR(S): Dandala, Ramesh, Hyderabad, INDIA
Sivakumaran, Meenakshisunderam, Hyderabad, INDIA

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 2004242556	A1	20041202	
APPLICATION INFO.:	US 2004-634978	A1	20040224	(10)

	NUMBER	DATE
PRIORITY INFORMATION:	IN 2003-4402003	20030602

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: Jay R Akhave, 845 Pomello Dr, Claremont, CA, 91711
NUMBER OF CLAIMS: 7
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 4 Drawing Page(s)
LINE COUNT: 291
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention relates to novel crystalline form of Cefdinir, 7β-[(Z)-2-(2-amino-4-thiazolyl)-2-hydroxyiminoacetamido]-3-vinyl-3-cephem-4-carboxylic acid, herein called as cefdinir crystal B, process to prepare it and the use of cefdinir crystal B in pharmaceutical compositions.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
SUMM . . . cefdinir that offered better filtration rate, high purity and stable cefdinir suitable for pharmaceutical preparation. This was prepared by treating **amorphous cefdinir** with sodium bicarbonate solution and the resulting aqueous solution was subjected to column chromatography and then adjusting the pH between 1-2 at 35-40° C. followed by cooling to obtain **cefdinir** crystals A. Alternatively, **amorphous cefdinir** was dissolved in methanol and to this solution added water at 35° C., stirred and allowed to stand at room. . .

L24 ANSWER 17 OF 19 USPATFULL on STN
ACCESSION NUMBER: 2004:268506 USPATFULL
TITLE: Crystalline acid salts of cefdinir and process for preparing cefdinir using same
INVENTOR(S): Lee, Gwan-Sun, Seoul, KOREA, REPUBLIC OF
Chang, Young-Kil, Seoul, KOREA, REPUBLIC OF
Kim, Hong-Sun, Seoul, KOREA, REPUBLIC OF
Park, Chul-Hyun, Seongnam-si Kyungki-do, KOREA, REPUBLIC OF
Park, Gha-Seung, Goyang-si Kyungki-do, KOREA, REPUBLIC OF
Kim, Cheol-Kyung, Namyangju-si Kyungki-do, KOREA, REPUBLIC OF

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 2004210049	A1	20041021	
APPLICATION INFO.:	US 2003-479291	A1	20031125	(10)
	WO 2002-KR1064		20020605	

	NUMBER	DATE
PRIORITY INFORMATION:	KR 2001-31339	20010605

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: David Einhorn, Anderson Kill & Olick, 1251 Avenue of the Americas, New York, NY, 10020
NUMBER OF CLAIMS: 11
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 4 Drawing Page(s)
LINE COUNT: 322
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB High purity cefdinir is prepared in a high yield by a process comprising the steps of: treating a cefdinir intermediate with a formic acid-sulfuric acid mixture or a formic acid-methanesulfonic acid mixture to obtain a crystalline salt of cefdinir and reacting the crystalline salt with a base in a solvent.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
SUMM [0003] U.S. Pat. No. 4,935,507 discloses a method of producing crystalline cefdinir, which comprises the steps of reacting **amorphous cefdinir** with an acid in a solvent and

adding a non-polar solvent thereto to precipitate an acid-added salt of cefdinir, e.g.,. . .
DETD . . . salts of cefdinir prepared in accordance with the present invention are novel crystalline monosulfliric acid and monomethanesulfonic acid salt of **cefdinir**, unlike the **amorphous** acid salts disclosed in the prior art.

L24 ANSWER 18 OF 19 INVESTEXT COPYRIGHT 2006 TFS on STN

Accession No.: 2008:945560 INVESTEXT(tm) REPORT NUMBER:11232354
Page No.: PAGE 3 OF 10
Document No.: 11232354
Title: ABBOTT LABORATORIES
Author: BIEGELSEN, L., ET AL
Corp. Source: PRUDENTIAL EQUITY GROUP, INC.; NEW YORK (STATE OF)
Region: MID-ATLANTIC/MIDDLE ATLANTIC REGION; UNITED STATES OF AMERICA; NORTH AMERICA
Publication Date: 16 May 2006
Report Type: COMPANY REPORT
File Segment: Text Page; COMPANY REPORT
Text Word Count: 593
SH DISCUSSION

TEXT

that . . . crystalline form of the Cefdinir disclosed in the '334 patent which is said to have better properties of stability than a purportedly **amorphous** form of **Cefdinir** that is obtained if one follows the methods for production and synthesis of Cefdinir disclosed in the '334 patent. This patent, originally. . .

L24 ANSWER 19 OF 19 INVESTEXT COPYRIGHT 2006 TFS on STN

Accession No.: 2008:945559 INVESTEXT(tm) REPORT NUMBER:11232354
Page No.: PAGE 4 OF 10
Document No.: 11232354
Title: ABBOTT LABORATORIES
Author: BIEGELSEN, L., ET AL
Corp. Source: PRUDENTIAL EQUITY GROUP, INC.; NEW YORK (STATE OF)
Region: MID-ATLANTIC/MIDDLE ATLANTIC REGION; UNITED STATES OF AMERICA; NORTH AMERICA
Publication Date: 16 May 2006
Report Type: COMPANY REPORT
File Segment: Text Page; COMPANY REPORT
Text Word Count: 627
SH DISCUSSION

TEXT

Cefdinir . . . duplicate the pharmacokinetic profile of the innovator while avoiding processing patents. It may be possible to formulate a product containing the "crystalline-like **amorphous** form" of **Cefdinir** disclosed in the '334 patent. Patent coverage for this ceases in May of 2007. After that, even if the '507 patent is. . .